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Evaluation of dental students' perspectives of specialization in periodontology

Muhammed Furkan Özcan, Kubilay Barış, Meltem Karşıyaka Hendek, Ebru Olgun

Department of Periodontology, Faculty of Dentistry, Kırıkkale University, Kırıkkale, Turkiye

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Corresponding Author: Meltem Karşıyaka Hendek, mltmkrsyk@yahoo.com

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ABSTRACT

Aims: The aim of this study was to define the perspective of dentistry students on specialization and to evaluate their thoughts and attitudes regarding specialization in the Periodontology department.

Methods: Our study was an epidemiological descriptive study consisting of a questionnaire applied to 274 students (167 female, 107 male) studying in the 3rd, 4th and 5th years at Kırıkkale University Faculty of Dentistry. Demographic data and students' perspectives on dentistry were evaluated and their thoughts and attitudes regarding specialization in periodontology were determined. Data analysis was performed using descriptive statistical methods and the Chi-square test.

Results: A high percentage of students (73.8%) participating in the study indicated that they were considering specialization in dentistry. It was reported that the most important criteria considered in the selection of specialization were interest in the specialization (53.5%) and job opportunities/financial returns of specialization education (32.0%). The Periodontology department (16.3%) was the 4th most desired department to specialize in. 35.6% of the students included in the study stated that the Oral and Maxillofacial Surgery department was the most important department in terms of patient care, while 21.8% stated that the Periodontology department was the third most important department in terms of dentistry. The students stated that they were most impressed by the Periodontology department with clinical experience (44.4%).

Conclusion: According to our study results, it was determined that students' first perceptions about dentistry began to form during their clinical periods and that factors such as their clinical experiences and the influence of faculty members were effective in their career choices.

Keywords: Dental specialties, dentistry, periodontology

INTRODUCTION

Dentistry, one of the most respected professions in the world and in Turkey, is changing and developing to provide better service to patients, just like every other branch. For years, dentists in our country have successfully applied standard dental treatments. However, in complicated and difficult cases, patients' efforts to reach specialist doctors in their fields have created some needs.[1] In parallel with this demand, since 2012, dentistry faculties in our country have started to provide specialist training in 8 different branches, just like in medical medicine. A dentist with a 5-year dentistry education can then work in a specific field for 3-4 years, receive the title of specialist dentist, and continue his/her career as an academician at universities or as a specialist dentist in private oral and dental health clinics.[2]

Various factors have been identified in the dental literature regarding whether to specialize in dentistry and the choice of specialization. Factors such as social or professional status; higher financial income, job security, social status in society, personal interest, and past experiences have been reported as the most important factors affecting specialization choices. However, the demographic characteristics of a population are also important determinants affecting the motivation and future expectations of dentistry students.[3,4] The interest in specialization in dentistry in Turkiye is increasing day by day due to the increase in the number of dentists graduating in recent years and the tendency to specialize in certain areas in order to keep up with market conditions.

In a study evaluating specialisation in the field of restorative treatment, 139 4th and 5th grade students were evaluated. According to the results of the study, it was seen that the most popular specialisation was oral, dental and maxillofacial surgery and 45.3% of the participants chose this field as their first choice. The majority of the participants, 66.9%, reported that they first heard about restorative dentistry in the preclinical department. According to the questionnaire, 47.5% of the students stated that the restorative dentistry

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department was primarily influenced by their clinical experiences.[5] In another study, dental students' perceptions of their speciality areas were evaluated. Questionnaires were distributed to 494 students at the University of Pennsylvania School of Dentistry. Data were collected from 380 traditional four-year students and thirty advanced students. Enjoyment of providing care in a speciality or area was identified as the most important factor in choosing a speciality career. Half of the participants decided not to specialise. Continuing post-doctoral education in general dentistry and opening a private practice in general dentistry were the most frequently reported plans after completing dental school.[6] Another study evaluated the perception and understanding of endodontic specialisation among dental students and newly graduated dentists. Their satisfaction with preclinical education, use of magnification in learning, and interest in pursuing endodontics as a future career were also examined. The study revealed that the majority of participants expressed high confidence in the diagnosis and treatment of endodontic cases. Perception did not differ significantly according to gender, level of education, teeth treated or experience of the supervising instructor. The study emphasises the importance of modifying the undergraduate dental curriculum to provide more preclinical training on extracted teeth, with a focus on determining working length and radiograph acquisition. These changes may help to reduce stress associated with endodontic procedures, improve treatment outcomes and increase patient satisfaction.[7]

Periodontology is the branch of science that studies the health, diseases and treatments of the tissues that support teeth and dental implants. Periodontal diseases are the main cause of tooth loss, especially in adults, and according to the World Health Organization (WHO) reports, they are among the most common diseases in the world. It is accepted that there is a two-way interaction between periodontal diseases and systemic diseases, and clinical findings of many systemic diseases are found in periodontal tissues.[8-10] The scope of the science of periodontology is gradually expanding, and since undergraduate education alone is not sufficient, specialization training is a necessity. Specialization training is a competency-based training process that includes advanced theoretical knowledge and clinical practices not included in undergraduate education.

Although there is little current literature on students' expectations regarding specialization in dentistry and the factors affecting their choice of specialization after entering the faculty of dentistry,[11-14] no study has been found in our country examining the place of the periodontology department in the future plans and career goals of dentistry students. The aim of this study is to determine the perspective of dentistry students on specialization and to evaluate their thoughts and attitudes regarding specialization in the periodontology department.

METHODS

Data Collection

The study was conducted in accordance with the ethical rules of the Declaration of Helsinki and approved by the Kırıkkale University Non-interventional Researches Ethics Committee (Date: 17.04.2024, Decision No: 2024.03.19). Prior to the study, all individuals participating in the study were given detailed information about the purpose and methodology of the study, and students who agreed to participate in the study were obtained using an informed consent form. The study included 3rd, 4th and 5th grade students studying at Kırıkkale University Faculty of Dentistry in the 2023-2024 academic year. Survey questions, modified from a previously published article,[8,11] were delivered to students via Google Forms. In the first part of the survey, demographic data and students' perspectives on dentistry were evaluated, while in the second part, their thoughts and attitudes regarding specialization in periodontology were determined.

Statistical Analysis

The data obtained in the study were analyzed using an SPSS for the Windows 25.0 program. Descriptive statistical methods (number, percentage, min-max values) were used to evaluate the data. Descriptive statistical methods and the Chi-square test were used in the evaluation of the data. The $p<0.05$ value was considered statistically significant.

RESULTS

The average age of the individuals included in the study was 22.70±1.74, between the ages of 20 and 34. 60.9% were female (n=167), 39.1% (n=107) were male. 33.8% (n=93) were 3rd-year students, 33.5% (n=92) were 4th-year students, and 32.4% (n=89) were 5th-year students. The responses to the survey questions were examined. The distribution of the responses to the questions is shown in Table 1.

A high percentage of students (73.8%) participating in the study, indicated that they were considering specialization in dentistry. The idea of specialization did not differ by grade level. When the gender distribution of these students was examined, the number of female who wanted to receive specialist training was significantly higher than male (Table 2).

In the question asking about the most important criterion when choosing a specialty, 147 students (53.5%) stated that interest in the specialty was the most important, while 88 students (32.0%) stated that it depended on the job opportunity/financial return of the specialty education. The duration of the specialty program was chosen by the least number of student (n=2).

The students listed the top three departments they dreamed of specializing in as oral, and maxillofacial surgery (41.5%), orthodontics (20.2%) and prosthodontics (18.5%). Periodontology ranked fourth with 16.3%. The least preferred department was oral and maxillofacial radiology (2.6%). Female and male did not give significantly different answers to this question ($p=0.425$). The answers they gave at the class level showed a significant difference for oral and maxillofacial surgery, pedodontics, orthodontics and restorative dentistry departments ($p=0.042$, $p=0.041$, $p<0.001$, $p=0.005$, respectively) (Table 3).

41.1% of the participants thought that the orthodontics department would provide the most financial gain. The least profit would be provided by the endodontics department (0.4%). Only 1.5% of the participants thought that the Periodontology department provided the most financial gain.

Table 1. Distribution of students' answers to survey questions

	n	Percent (%)
What are the top three specialties you dream of pursuing?		
Oral and maxillofacial radiology	20	2.6
Prosthodontics	145	18.5
Oral and maxillofacial surgery	180	23.0
Pedodontics	48	6.1
Endodontics	40	5.1
Periodontology	128	16.3
Orthodontics	158	20.2
Restorative dentistry	65	8.3
Are you considering specializing in any field of dentistry?		
Yes	203	73.8
No	14	5.1
Undecided	57	20.7
What is the most important criterion you consider when choosing a specialty?		
Interest in the specialty field	147	53.5
The impact of the faculty where you will receive your specialty training	7	2.5
The competence of the faculty members in the specialty field	11	4.0
The impact of the city where you will receive your specialty training	17	6.2
Duration of the specialty program	2	0.7
Job opportunities/financial benefits of the specialty training	88	32.0
Other	2	0.7
Which specialty do you think would provide the highest financial earnings?		
Oral and maxillofacial radiology	5	1.8
Prosthodontics	73	26.5
Oral and maxillofacial surgery	68	24.7
Pedodontics	10	3.6
Endodontics	1	0.4
Periodontology	4	1.5
Orthodontics	113	41.1
Restorative dentistry	0	0
Which specialty do you believe is the most important in terms of patient care?		
Oral and maxillofacial radiology	31	11.3
Prosthodontics	25	9.1
Oral and maxillofacial surgery	98	35.6
Pedodontics	10	3.6
Endodontics	32	11.6
Periodontology	60	21.8
Orthodontics	7	2.5
Restorative dentistry	11	4.0
Which specialty do you believe is the most effective in the field of dentistry?		
Oral and maxillofacial radiology	19	6.9
Prosthodontics	38	13.8
Oral and maxillofacial surgery	114	41.5
Pedodontics	6	2.2
Endodontics	30	10.9
Periodontology	34	12.4
Orthodontics	15	5.5
Restorative dentistry	18	6.5
When did you first learn about the field of periodontology?		
Pre-university	91	33.1
University selection period	42	15.3
Clinical observation period / theoretical lecture period	137	49.8
Clinical period	4	1.5
What was the most impactful introductory experience you had related to the field of periodontology?		
Clinical observation period / theoretical lecture period	65	23.6
Clinical experience	96	34.9
The faculty member teaching the periodontology lecture	94	34.2
Textbook	7	2.5
Internet/websites	6	2.2
Other	6	2.2
How would you evaluate your first experience with periodontal treatment?		
Mostly positive	122	44.4
Somewhat positive	90	32.7
Undecided	44	16.0
Somewhat negative	15	5.5
Mostly negative	3	1.1
What is your overall perception of the future demand and outlook for the field of periodontology?		
Mostly positive	149	54.2
Somewhat positive	82	29.8
Undecided	35	12.7
Somewhat negative	6	2.2
Mostly negative	2	0.7
If you want to specialize in periodontology, what is the main reason behind that choice?		
Contribution to professional life	95	34.5
Patients' needs	64	23.3
Financial gain	55	20.0
Personal skills	43	15.6
Other	17	6.2

Table 2. Distribution of considering specialization by gender [n (%)]

	Male	Female	Total	X^2	p
Are you considering specializing in any field of dentistry?					
Yes	72 (35.5%)	131 (64.5%)	203 (100.0%)		
No	9 (64.3%)	5 (35.7%)	14 (100.0%)	**5.766**	**0.044**
Undecided	26 (24.3%)	31 (18.6%)	57 (100.0%)		

Of the students included in the study, 35.6% stated that oral and maxillofacial surgery was the most important department in terms of patient care, while 21.8% stated that Periodontology was the most important department in terms of patient care. No significant difference was observed at the class level (p=0.157).

When asked, 'Which specialty do you think is the most effective department in terms of dentistry?', 41.5% of the students responded as oral and maxillofacial surgery department. The least effective department was pedodontics with 2.2%. Periodontology ranked third among all departments with 12.4%. A significant difference was observed at the class level (p=0.012). Participants in the 5th grade stated Prosthodontics as the most effective department compared to participants in the 3rd grade while 4th grade students stated that the most effective department, compared to 5th grade students, was the oral and maxillofacial surgery department (Table 3).

49.8% of the students participating in the study stated that they learned about the Periodontology department for the first time during the clinical observation period/theoretical course period. Moreover, 33.1% of them stated that they knew about it before university. Students stated that they were most influenced by the periodontology department through clinical experience (34.9%). A similar rate (34.2%) also stated that the lecturer/theoretical course teaching the periodontology lecture was also effective.

44.4% of the participants stated that their first experience with periodontal treatment was mostly positive. Students stated that there will be a high demand for the periodontology department in the future (54.2%). The students participating in the study stated that the most important reason for wanting to specialize in periodontology was its contribution to professional life with a rate of 34.5%.

DISCUSSION

This study was designed to determine the opinions of third, fourth and fifth year dentistry students about the periodontology department and where periodontology fits into their career plans. In studies evaluating perspectives on specialization in different branches, only 4th and 5th year

Table 3. Distribution of answers to questions according to class level

	3rd year	4th year	5th year	Total	X^2	p
	n (%)	n (%)	n (%)	n		
Are you considering specializing in any field of dentistry?						
Yes	74 (36.5%)	71 (35.0%)	58 (28.6%)	203		
No	3 (21.4%)	2 (14.3%)	9 (64.3%)	14	9.244	0.055
Undecided	16 (28.1%)	19 (33.3%)	22 (38.6%)	57		
Which specialty do you believe is the most important in terms of patient care?						
Oral and maxillofacial radiology	11 (35.5%)	12 (38.7%)	8 (25.8%)	31		
Prosthodontics	6 (24.0%)	9 (36.0%)	10 (40.0%)	25		
Oral and maxillofacial surgery	37 (37.8%)	40 (40.8%)	21 (21.4%)	98		
Pedodontics	2 (20.0%)	1 (10.0%)	7 (70.0%)	10	19.214	0.157
Endodontics	10 (31.3%)	8 (25.0%)	14 (43.8%)	32		
Periodontology	22 (36.7%)	17 (28.3%)	21(35.0%)	60		
Orthodontics	1 (14.3%)	2 (28.6%)	4 (57.1%)	7		
Restorative dentistry	4 (36.4%)	3 (27.3%)	4 (36.4%)	11		
Which specialty do you believe is the most impactful in the field of dentistry?						
Oral and maxillofacial radiology	8 (42.1%)	5 (26.3%)	6 (31.6%)	19		
Prosthodontics	5 (13.2%)	14 (36.8%)	19 (50.0%)	38		
Oral and maxillofacial surgery	40 (35.1%)	50 (43.9%)	24 (21.1%)	114		
Pedodontics	1 (16.7%)	1 (16.7%)	4 (66.7%)	6	28.629	0.012
Endodontics	11 (36.7%)	7 (23.3%)	12 (40.0%)	30		
Periodontology	13 (38.2%)	7 (20.6%)	14 (41.2%)	34		
Orthodontics	7 (46.7%)	5 (33.3%)	3 (20.0%)	15		
Restorative dentistry	8 (44.4%)	3 (16.7%)	7 (38.9%)	18		
What are the top three specialties you dream of pursuing?						
Oral and maxillofacial radiology	7 (3.4%)	5 (2.1%)	8 (4.3%)		0.887	0.648
Prosthodontics	43 (36.3%)	58 (52.9%)	44 (39.2%)		5.887	0.054
Oral and maxillofacial surgery	62 (56.7%)	68 (64.3%)	50 (45.8%)		6.308	0.042
Pedodontics	11 (6.4%)	14 (9.0%)	23 (17.6%)		6.365	0.041
Endodontics	8 (4.2%)	15 (9.8%)	17 (12.0%)		4.505	0.102
Periodontology	46 (39.4%)	39 (32.7%)	43 (38.1%)		1.070	0.588
Orthodontics	71 (67.0%)	52 (46.3%)	35 (29.7%)		26.062	<0.001
Restorative dentistry	21 (15.0%)	13 (8.2%)	31 (25.5%)		10.686	0.005

students were included.[13,14] However, since both clinical observation courses and periodontology theoretical lecture begin in the 3rd year, 3rd year students were included in this study along with 4th and 5th year students.

Receiving specialization training in dentistry helps dentists achieve higher income potential and professional prestige in their careers. This training is an important step in advancing in their field of specialization and advancing their careers, and plays an important role in both professional development and patient care quality. For these reasons, the increasing number of graduated dentists in our country is leading doctors to specialize. In this study, a very large percentage of participants stated that they were considering specialization. When gender distribution is examined, it is found that female who want to receive specialization training are significantly more than male. While in the early 2000s, one in every five dentists in some developed countries was a female and this rate was even lower among specialist dentists, in recent years the rate of female dentists and female dentistry students has been increasing. According to statistical studies conducted in Europe, dentistry is increasingly becoming a branch in which female predominate.[15] In fact, especially in developed countries, the number of female dentists receiving specialization training has begun to exceed their male colleagues.[16] The rates of students participating in this study who are inclined to receive specialization training according to their gender distribution are similar to the trends of their colleagues in developed countries today.

In a study conducted, it was observed that there was no difference in the first preferences at the class level when their desire for specialisation was evaluated. When specialisation tendencies at the class level were examined, no statistical difference was observed between the classes in the study.[7] In our study, oral, dental and maxillofacial surgery was the department in which specialisation was considered the most.

Many professional, economic and personal factors play a role in a person's decision to specialize.[17] In this study, it was observed that the most important factor that participants paid attention to when choosing a specialization was having a personal interest in the relevant specialization, regardless of the student's gender and grade. There are studies supporting this situation in the literature.[6,18,19] In their 2018 study, Alrashdan et al.[20] revealed that the choice of specialization according to the economic income and levels of the countries; financial expectations, reputation of the specialization, duration and cost of the education to be received differed among nations. Similarly, in our study, financial return and job opportunities were the second most important factors affecting the choice of specialization. Positive statements and wishes about periodontology may have been not preferred among students when the issue of financial gain came into play, causing positive opinions to appear contradictory.

The first three departments that the participants considered specializing in were oral and maxillofacial surgery, orthodontics, and prosthetic dentistry. Periodontology ranked 4th. This ranking varies in different studies.[6,11,21] Erhamza et al.[11] reported in their study that females dream of specializing in the oral and maxillofacial surgery, orthodontics and pedodontics departments at a much higher rate than males. While an undergraduate dentistry student receives training on the basic information of a wide variety of specializations, when he/she enters a specialization training program, he/she learns the most in-depth information about a specific field of knowledge and practice. However, students choose the specialization they are interested in based on their undergraduate experiences. Therefore, we believe that increasing the educational curriculum that students enjoy during their undergraduate education will increase their orientation towards the specialization of the relevant department. Dhima et al.[6] showed that male prefer the oral and maxillofacial surgery department more than female. In the same study, it was observed that females want to specialize in the pedodontics department more than males. In a similar study conducted in our country, it was found that females want to specialize in the oral and maxillofacial surgery department more.[13] In this study, the departments considered as specialization areas did not create a difference between females and males. This may be due to individual differences and the individual's interest in that area, regardless of gender.

Only 1.5% of the participants thought that the periodontology department provided the most financial gain. However, in contrast, the fact that the periodontology department was the 4th most preferred department in terms of specialization suggests that interest in the specialty rather than financial gain is more decisive.

Aksoy et al.[13] found that the oral and maxillofacial surgery, pedodontics and oral and maxillofacial radiology departments were important in terms of patient care, respectively. Erhamza et al.[11] reported that the oral and maxillofacial surgery department was selected with a high rate in terms of patient care in their study. Similarly, the Periodontology department was ranked second in terms of patient care and third as the most effective department in terms of dentistry in this study. These findings may be due to the idea that periodontal treatments are important both in preventing tooth loss and in maintaining general health.

The positive or negative evaluation of clinical experiences has an impact on students' future specialization choices.[22] Students' first experiences with the periodontology department are mostly positive, supporting the idea that this will have a positive impact on their choice of specialization.

Limitations

Only students continuing their education at one university participated in the study. The inclusion of only one university in the study can be considered as a limitation. This information should be kept in mind when interpreting the data within this limitation.

CONCLUSION

The specialization process in dentistry is an important decision that will shape the lives of students. In making this decision, it is important for students to complete their knowledge about the specialization branch they are considering, to determine their abilities in this specialization branch, and to guide students with the right guidance. According to the results of our study, the decision to become a specialist and choose a department is a personal decision and is formed by the experiences and interests of the student throughout their undergraduate life. The job opportunities and financial returns of specialization education are other

determining criteria in terms of specialization choice. More universities participating in the study and reaching a wider population will provide more detailed information on the subject. In addition, survey studies using more advanced scales can be beneficial in revealing the decision-making patterns in the selection of a specialization branch in dentistry.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of the Kırıkkale University Non-interventional Researches Ethics Committee (Date: 17.04.2024, Decision No: 2024.03.19).

Informed Consent

Informed consent was obtained from all patients participating in this study.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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